

Environmental Assessment

BUILDING OF NEW ADMINITSTRATIVE OFFICE AND VISITOR CONTACT FACILITIES

On

DEEP FORK NATIONAL WILDLIFE REFUGE, OKMULGEE COUNTY, OKLAHOMA

01/14/2010

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1.0 PURPOSE OF AND NEED FOR PROPOSED ACTION ALTERNATIVE

1.1 Introduction:

The United States Fish and Wildlife Service (Service), is proposing to construct a new administrative office facility on Deep Fork National Wildlife Refuge (NWR) near Okmulgee, OK. The proposed building will be a total of approximately 3198 square feet, 2574 square feet of which will contain office facilities. The office portion of the facility will support 5 to 7 offices, a secure evidence storage room, and a conference/break room/kitchenette, and supporting space. Of the remaining square footage, 624 square feet will contain a visitor contact/reception area with some small exhibits, and public restrooms. The project also includes the design and construction of a public parking lot with 20 spots and an employee parking lot with a small pole shed for covered parking. Please see detailed plans Appendix A. This Environmental Assessment (EA) is being prepared to evaluate the effects associated with this proposal and complies with the National Environmental Policy Act (NEPA) in accordance with Council on Environmental Quality regulations (40 CFR 1500-1509) and Department of the Interior (516 DM 8) and Service (550 FW 3) policies. NEPA requires examination of the effects of proposed actions on the natural and human environment. In the following chapters, two alternatives are described and environmental consequences of each alternative are analyzed.

1.2 Location:

The proposed location is on Deep Fork NWR, Okmulgee County, Oklahoma at 35° 32' 19.15 N, 95° 55' 39.8 S, 5.8 miles South of Okmulgee, OK on Hwy 75, 1 mile east on Lavender Street, then 1.7 miles north on South 250 Road. The area of impact would be approximately 10 acres.

1.3 Background:

The Deep Fork National Wildlife Refuge was authorized in 1992, under the authorities of the Emergency Wetlands Resources Act of 1986 and the Migratory Bird Conservation Act of 1929. Establishment of the Refuge serves to protect and enhance the valuable freshwater wetlands and wildlife habitats along the Deep Fork River.

Land acquisition began in June 1993, with the purchase of 4,681 acres using Land and Water Conservation funds appropriated by Congress. The original acquisition boundary approved in 1992 would bring the total acreage figure to 16,213 if all land were acquired. A Refuge boundary expansion was approved in 1993 which would add an additional 2,146 acres within the proposed Refuge boundary. This latest boundary expansion allows for a total of 18,359 acres to be purchased from willing sellers. All of the proposed land acquisition is located within Okmulgee County. Currently the Service has ownership of (acquired by purchase or donation) a total of 9,212.5 acres.

The refuge is located largely in the floodplain of the Deep Fork of the North Canadian River, commonly known as the Deep Fork River, extending along approximately 34 miles of the river in a northwest-southeast direction. The Refuge is approximately 100 miles east of Oklahoma City and 35 miles south of Tulsa. U.S. Highway 75 runs north and south through the Refuge, and Interstate 40 runs east and west roughly 2.5 miles south of the southern Refuge boundary. The Refuge is bounded on the west by the Okmulgee Wildlife Management Area and on the south by the Eufaula Wildlife Management Area, both of which are administered by the Oklahoma Department of Wildlife Conservation.

Historically, the bottomland hardwood forest community of the Deep Fork River was a complex, diverse, and interrelated association of plants and animals, created and maintained by periodic, natural flooding.

However, years of development and habitat alteration by humans have significantly modified the dynamic and pristine floodplain ecosystem.

Today, Refuge lands are a mixture of regenerating bottomland forest, drained and natural wetlands, agricultural lands (mostly pastureland and pecan orchards with a small acreage of cropland), and some upland hardwood forest and prairie. Given time, protection, and proper management, the Refuge bottomlands should regain much of the character of a mature riparian forest ecosystem, including the diverse assemblage of plants and animals representative of these vanishing habitats.

Protection, restoration and maintenance of the bottomland hardwood forest along the Deep Fork River will contribute significantly to the survival of the complex bottomland forest ecosystem and to the diversity of plant and animal communities in eastern Oklahoma.

1.4 Purpose and Need for Proposed Action:

The U.S. Fish and Wildlife Service received funding through the American Recovery and Reinvestment Act of 2009 to construct a safe, spacious, energy-efficient administrative office facility at Deep Fork National Wildlife Refuge. Construction of an administrative office is needed to move staff out of GSA rental facilities currently being utilized in Okmulgee, Oklahoma. Deep Fork NWR headquarters have been in rented facilities at 111 West 4th Street, Okmulgee, OK, since 1993. Currently visitors have to leave the refuge, drive to the Federal building in Okmulgee where there is no public parking, and pass thru a federal bankruptcy court security check point (similar to airport security) on the 1st floor before being allowed to proceed to our location on the 3rd floor to get information on the refuge. This facility will place refuge staff on the refuge where they will be accessible to the public, and provide a means for additional environmental education and public outreach to the general public of Eastern Oklahoma. The project site offers natural aesthetic scenery, and close proximity to existing visitor use and environmental education facilities such as an asphalt walking trail, the boardwalk trail, outdoor education deck, an photo/observation blind, an information kiosk, and a newly constructed pavilion, and has conveniences such as rural water service, and electric installation.

The Refuge receives over 40,000 visitors annually and provides opportunities for the public to hunt (small game such as squirrel and rabbit, and big game such as white-tailed deer and eastern wild turkey), fish (freshwater fish species), observe and photograph wildlife, and learn about this bottomland ecosystem through interpretive and environmental education programs. Eastern Oklahoma has a long and rich tradition of outdoor recreation. Demand for these recreational opportunities on public lands and waters are increasing.

1.5 Decision to be Made:

This EA evaluates the environmental impacts of the alternatives and provides information to help the Service fully consider these impacts and any proposed mitigation. Using the analysis in this EA, the Service will decide whether there would be any significant effects associated with the alternatives that would require the preparation of an environmental impact statement or whether the Proposed Action Alternative can proceed. This environmental assessment will be used to determine the path of least impact to the affected environment, and the most functional placement of facilities to carry out the mission of the USFWS.

1.6 Regulatory Compliance:

This EA was prepared by the Service and represents compliance with applicable Federal statutes, regulations, Executive Orders, and other compliance documents, including the following:

- American Indian Religious Freedom Act of 1978 (42 U.S.C. 1996)
- Archaeological Resources Protection Act of 1979 (16 U.S.C. 470)
- Clean Air Act of 1972, as amended (42 U.S.C. 7401 *et seq.*)
- Clean Water Act of 1972, as amended (33 U.S.C. 1251 *et seq.*)
- Endangered Species Act of 1973, (ESA) as amended (16 U.S.C. 1531 *et seq.*)
- Executive Order 12898, Federal Action Alternatives to Address Environmental Justice in Minority Populations and Low Income Populations, 1994.
- Fish and Wildlife Coordination Act of 1958, as amended (16 U.S.C. 661 *et seq.*)
- Floodplain Management (Executive Order 11988)
- National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 *et seq.*)
- Regulations for Implementing the Procedural Provisions of NEPA (40 CFR 1500 *et seq.*)
- National Historic Preservation Act of 1966, as amended (16 U.S.C. 470 *et seq.*)
- Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. 3001 *et seq.*)
- Protection and Enhancement of the Cultural Environment (Executive Order 11593)
- Protection of Wetlands (Executive Order 11990)
- National Pollutant Discharge Elimination System, as amended (33 U.S.C. 1251 *et seq.*)

Further, this EA reflects compliance with applicable State of Oklahoma and local regulations, statutes, policies, and standards for conserving the environment and environmental resources such as water and air quality, endangered plants and animals, and cultural resources.

The U.S. Army Corps of Engineers (USACE) has been charged with the legal authority to protect the water resources of the United States, including vegetated wetlands, through Section 404 of the Clean Water Act. The USACE regulatory program supports the national goal of “no overall net loss” of wetlands through the sequencing process which ensures that any environmental impact on aquatic resources from construction projects, that would require discharge of dredge or fill material, where applicable, should avoid, minimize, or mitigate for these unavoidable impacts to the “waters of the U.S.,” including wetlands. A wetland delineation of the proposed project area determined that the project area was not located in jurisdictional wetlands that require USACE 404 permitting.

An archaeological review is currently being performed. Letters of project intent were sent to David Siegel Region 2 Cultural Resources Manager, U.S. Fish and Wildlife Service, Dr. Bob Blackburn, State Historic Preservation Officer, Oklahoma Historical Society and Dr. Robert Brooks, State Archeologist, Oklahoma Archeological Survey to determine if a complete archeological survey will be required on the proposed site. Despite the lack of any resources of concern, contingencies are incorporated into all FWS construction contracts that allow for the proper treatment disposition of archeological sites if any are subsequently located during the construction phase of the project.

1.6 Public Involvement and Issues Identified:

On October 30, 2009 the Service announced its intent to prepare an Environmental Assessment of alternatives for the construction of an administrative office facility on Deep Fork NWR, near Okmulgee, OK. A 45-day scoping period from October 30, 2009 to December 15, 2009 was established under that notice. The Service posted the project summary and the announcement of the initial scoping period for the development of this EA in our office, at the Okmulgee Public Library, and on the refuge website.

During the scoping period, the Service did not receive any comments or concerns associated with development of this EA. Upon release of this document, there will be a 30 day public comment period during which Deep Fork NWR will accept public input on the Proposed Action.

2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION ALTERNATIVE

2.1 Alternative A--No Action Alternative:

Under the No Action Alternative, current management direction would continue. Administrative offices would continue to be leased GSA space in Okmulgee, OK. It would remain difficult for the public to access refuge staff and environmental education and public outreach opportunities would continue to be limited.

2.2 Alternative B— Building of Deep Fork NWR administrative office facilities on existing refuge property near the Cussetah Bottoms Parking Area(Proposed Action).

The objective of the proposed action is to build a functional administrative office for Deep Fork NWR near the Cussetah Bottoms parking area. The proposed office facilities floor plan and site layout remains the same as in alternative B. The Cussetah Bottoms project site provides a central location within the refuge boundary for visitors to get information on the refuge and utilize the already existing facilities, such as an asphalt walking trail, the boardwalk trail, an outdoor education deck, a photo/observation blind, an information kiosk, 24 hour access to park-style self-contained restrooms, and a newly constructed pavilion. The entrance roads, Lavender Street and South 250 Road are existing gravel roads that are currently being paved by the Okmulgee County Road Department. Electric and rural water services are available at the site.

Interpretive themes are those ideas or concepts that are critical for achieving visitor understanding and appreciation of the significance of Deep Fork NWR. Primary themes do not include everything that would be interpreted, but they provide the foundation from which program themes and objectives can be developed. All interpretive efforts should relate to one or more of the primary themes. Effective interpretation results when visitors are able to connect concepts with resources and derive something meaningful from the experience.

Visitors to the Refuge Office should have the opportunity to be exposed to the following themes: recreation/visitor orientation, refuge habitats and wildlife, habitat management tools, and conservation and stewardship.

2.3 Alternatives considered, but not analyzed in detail

The refuge considered building on other upland sites on within currently owned refuge lands, but all other sites do not have clear access, good roads, and utilities nearby. The refuge also considered constructing the office facilities at a suitable building site that is not currently owned by the refuge; however, this would require the purchase of additional property. This alternative is not practical because it could not be accomplished in a timely manner and it would exceed the current budget for this project.

3.0 AFFECTED ENVIRONMENT:

The refuge is located largely in the floodplain of the Deep Fork of the North Canadian River, commonly known as the Deep Fork River, extending along approximately 34 miles of the river in a northwest-southeast direction. The Refuge is bounded on the west by the Okmulgee Wildlife Management Area and

on the south by the Eufaula Wildlife Management Area, both of which are administered by the Oklahoma Department of Wildlife Conservation.

Historically, the bottomland hardwood forest community of the Deep Fork River was a complex, diverse, and interrelated association of plants and animals, created and maintained by periodic, natural flooding. However, years of development and habitat alteration by humans have significantly modified the dynamic and pristine floodplain ecosystem.

Today, Refuge lands are a mixture of regenerating bottomland forest, drained and natural wetlands, agricultural lands (mostly pastureland and pecan orchards with small acreages of cropland), and some upland hardwood forest and prairie. Given time, protection, and proper management, the Refuge bottomlands should regain much of the character of a mature riparian forest ecosystem, including the diverse assemblage of plants and animals representative of these vanishing habitats.

3.1 Physical Environment:

3.1.1 Air Quality:

Air quality in east central Oklahoma is excellent, as would be expected in a primarily rural area that has limited industry. Accordingly, no permanent air monitoring stations have been established in Okmulgee County. The Refuge is designated as Class 1 land under the guidelines provided in the 1977 Clean Air Act, a classification that contains provisions to maintain high air quality.

3.1.2 Soils / Geology:

The geologic formations that are at the surface, or immediately beneath the soils in Okmulgee County, are of sedimentary nature. Except for recent alluvium and quaternary terrace deposits, these formations belong to the Pennsylvanian system.

Flooding patterns largely have determined the nature of soils in bottomland hardwood forest ecosystems. The floodplain soils associated with the Deep Fork River bottom are the Verdigris, Pulaski, Roebuck, and Lightning series. The soils in the upland areas related to this project are the Dennis Silt Loam with a 1-3 percent slope, Stidham loamy fine sand with a 0-1 percent slope, and Parsons Silt Loam with a 0-1 percent slope.

The soils in the area related to this project are Stidham loamy fine sand with a 0-1 percent slope.

The Stidham series consists of deep, well-drained, nearly level soils in terraces along the Deep Fork Canadian River. These soils developed in sandy alluvium under oak forest. The Surface layer consists of about 23 inches of loamy fine sand, pale brown in the upper part and very pale brown in the lower part. The subsoil, which is about 30 inches thick, is brownish-yellow sandy clay loam. Below a depth of 50 inches is mottled red and very pale brown sandy clay loam. Stidham soils are medium acid to very strongly acid and low in natural fertility. They absorb water readily, but they have low water-holding capacity. These soils are easy to work. The response to fertilization is good. Nearly all of this soil has been cultivated, but now about half of it is idle or is used for pasture.

3.1.3 Water Resources and Quality:

The Deep Fork River drains a watershed of approximately 2,548 square miles. The River originates in western Oklahoma County, Oklahoma, and flows generally easterly for 230 miles through Lincoln, Creek, Okfuskee, and Okmulgee Counties to its confluence with the North Canadian River in Eufaula

Reservoir in McIntosh County. At least thirteen named streams (i.e., Salt, Little Deep Fork, Negro, Honey, Okmulgee, Cussetah, Fourmile, Montezuma, Burgess, Moore, Coal, Wolf and Grave Creeks) feed the Deep Fork River within Okmulgee County.

The Deep Fork watershed is comprised of hilly terrain that accelerates runoff and causes frequent flooding. Reservoir construction, channelization, conversion of the floodplain to agricultural uses, and the addition of numerous, small floodwater-retarding structures have significantly moderated the natural flooding regime of the river. Major flooding along the Deep Fork occurs roughly once every five years, moderate flooding once every 1.5 years, and minor flooding twice per year.

Ground elevations on the Refuge range from nearly 900 feet above sea level on the highest upland site to 590 feet above sea level along the river channel in the bottoms near the southern Refuge boundary. Most of the Refuge is located within the 100-year floodplain, and over 80 percent of it floods at least once a year except during very dry periods. On some parts of the Refuge, watermarks on the trees are ten feet high.

Eufaula Reservoir, completed in 1964, inundated the southernmost reach of the Deep Fork River. The reservoir backs up into the southern part of the Refuge during floods as the water level approaches the limits of the reservoir's flood pool.

Wetland areas include the Deep Fork River, sloughs, oxbow lakes, and shallow wetlands, flooded scrub/shrub, and flooded woodlands.

The refuge has conducted an extensive and prolonged water quality monitoring program in the Deep Fork River. Baseline contaminants data was collected in the confluences of most of the major streams. The refuge participates in a program administered by the Oklahoma State Conservation Districts called "Blue Thumb." The "Blue Thumb" program uses volunteers to collect and analyze water samples collected at various places along the river at monthly intervals. The refuge has also been involved in contaminant cases involving improper discharges into the Deep Fork River by a municipality and by a local food product manufacturer. Various illegal discharges into the river have resulted in significant mortality and stress of aquatic life at various times of the refuge history. Only the continual monitoring and possible enforcement action can help ensure high water quality in the river. Water quality in other wetlands on the refuge has not been tested.

The project site has numerous small wetlands nearby, Montezuma Creek about 1 mile to the north, and the Deep Fork Canadian River about 1 mile to the East. There are no water resources within the project area. The proposed project will not impact any of the nearby wetlands.

3.2 Biological Environment:

3.2.1 Vegetative Communities:

The bottomland hardwood forest ecosystem of eastern Oklahoma is characterized by a great diversity of plant species and communities. Woodlands in areas with regularly saturated soil contain a variety of water-tolerant species, including black willow, river birch, cottonwood, sycamore, swamp privet, and buttonbush. A complex mixture of oaks, black walnut, pecan, hickories, sugarberry, cottonwood, boxelder, green ash, and other hardwood species of all ages occupy somewhat higher ground. The vegetative communities present today have been altered from the mature hardwood forest ecosystem that once existed in the Deep Fork River floodplain. Today the river bottomlands are a mosaic of river, streams, oxbows, sloughs, marshes, beaver ponds, bottomland hardwood forest, cut-over areas regenerating with dense brush, pastureland, and pecan groves.

Plant associations occurring on the Refuge currently consist of:

- (1) Emergent wetlands where floating aquatic vegetation, sedges, bulrushes and smartweed predominate, and buttonbush, swamp privet, and black willow comprise the woody component, usually growing around the edges of the wetlands.
 - (2) Seasonally flooded areas with permanently saturated soils that support predominantly brushy species such as swamp privet, hawthorn, and buttonbush with a ground cover of sedges, smartweed, and water-tolerant grasses in some places.
 - (3) Seasonally flooded bottomlands where soils are not permanently saturated that support a mix of hardwoods, shrubs, vines, and herbaceous plants typical of floodplain forests in the area.
 - (4) Steep upland slopes dominated by post oak/blackjack oak forest.
 - (5) Gently sloping or level sites above the floodplain that support grassland or grassland/oak savannah.
- Grasslands in the area are composed of species representative of the tallgrass prairie.

Vegetation at the project site is previously disturbed grassland/oak savannah, which is composed of grass species representative of the tallgrass prairie.

3.2.2 Wildlife:

Wildlife species found on the refuge are typical of bottomland hardwood forests, moist soils, upland post oak/blackjack oak forests, and tallgrass prairie. A total of 149 species of birds - nine game species and 140 nongame species - are known or thought to use the bottomland forests and associated habitats in eastern Oklahoma. The numerous sloughs and streams support large numbers of great blue, little blue, and great and snowy egrets. Four great blue heron rookeries are located on the Refuge; these rookeries are used by snowy egrets after the young herons fledge. Raptors, woodpeckers, and songbirds use the area in great numbers. The Refuge is a very important migration stop for many species of neotropical birds, and provides suitable nesting habitat for many others.

Wetlands nourished by the Deep Fork River are important wintering habitat for numerous waterfowl species, and are particularly important for wintering mallards. Depending on existing environmental conditions, particularly weather patterns, peak populations of wintering waterfowl using the Refuge have been estimated at 5,000-20,000 mallards, 1,000-5,000 wood ducks, and 1,000-2,000 other miscellaneous duck species. The sloughs, marshes, and overflow areas in the river bottoms also furnish vital nesting and rearing habitat for wood ducks.

Fifty-one species of mammals have been recorded in the Deep Fork River basin. Common game and furbearing mammals in the basin include white-tailed deer, gray and fox squirrels, beaver, eastern cottontail, swamp rabbit, raccoon, coyote, and opossum. Furbearer populations, especially those of the raccoon, are among the highest in the state. Swamp rabbits are regularly seen in the Deep Fork River bottoms.

Fifty-nine fish species have been identified from the river, streams, and reservoirs of the Deep Fork River basin, and many are likely to be found in Refuge waters. The Deep Fork River provides feeding and spawning habitat for many sport fish native to east central Oklahoma. The most important species to anglers are the channel catfish, flathead catfish, blue catfish (a.k.a. Mississippi white catfish), crappie, white bass, and largemouth bass.

Approximately 54 species of reptiles and 22 species of amphibians have been reported from Okmulgee County. Many of these likely occur on Refuge.

Pocket gophers, grassland birds, white-tailed deer, field mice, and rats might be found at the project site.

3.2.3 Threatened and Endangered Species and Other Special Status Species:

Several Federally-listed Threatened and Endangered Species (T&E species), listed under the Endangered Species Act of 1973, occur on the refuge, including the interior least tern, whooping crane, piping plover, and American burying beetle; however, none of these species or their habitat are known to occur within the proposed construction site.

The Refuge has consulted with the USFWS Ecological Service's Tulsa Field Office to determine the potential for other threatened and endangered species to occur within the project area through a Intra-service Section 7 Biological Evaluation process. The Oklahoma Ecological Services Field Office reviewed the project and concurred that there would be no effect on species or critical habitat on the Endangered Species list. However, the occurrence of the American Burying Beetle in adjacent counties has been documented and the Service will conduct surveys in the near future.

3.3 Human Environment:

The 1990 census reported the population of Okmulgee County to be 36,490 persons; roughly 37 percent of these lived in the City of Okmulgee. The per capita income was \$8,799.00. In 1990, the civilian labor force in the City of Okmulgee was estimated at 5,248, and of these, about 4,684 (roughly 89 percent) were employed.

3.3.1 Cultural Resources:

The body of federal historic preservation laws has grown dramatically since the enactment of the Antiquities Act of 1906. Several themes recur in these laws, their promulgating regulations, and more recent Executive Orders. They include: 1) each agency is to systematically inventory the historic properties on their holdings and to scientifically assess each property's eligibility for the National Register of Historic Places; 2) federal agencies are to consider the impacts to cultural resources during the agencies management activities and seek to avoid or mitigate adverse impacts; 3) the protection of cultural resources from looting and vandalism are to be accomplished through a mix of informed management, law enforcement efforts, and public education; and 4) the increasing role of consultation with groups, such as Native American tribes, in addressing how a project or management activity may impact specific archaeological sites and landscapes deemed important to those groups. The U.S. Fish and Wildlife Service, like other federal agencies, are legally mandated to inventory, assess, and protect cultural resources located on those lands that the agency owns, manages, or controls. The Service's cultural resource policy is delineated in 614 FW 1-5 and 126 FW 1-3. In the FWS's Southwest Region, the cultural resource review and compliance process is initiated by contacting the Regional Historic Preservation Officer/Regional Archaeologist (RHPO/RA). The RHPO/RA will determine whether the proposed undertaking has the potential to impact cultural resources, identify the "area of potential effect," and determine the appropriate level of scientific investigation necessary to ensure legal compliance, and initiates consultation with the pertinent State Historic Preservation Office (SHPO) and federally recognized Tribes.

Creek Tribal government began in Okmulgee County in 1867. In 1907, Oklahoma became a state and the tribal government was dissolved. The tribal government was re-instated in 1971. The State archeologist has indicated that 13 archeological sites, 2 historic homesteads, 6 marked cemeteries, and other unmarked plots exist within the proposed Refuge boundary.

A private Native American cemetery is located nearby, but is not within the project site area, and will not be impacted by either alternative described in the EA. Letters of project intent were sent to the Region 2

Archeologist, Oklahoma State Archeologist, and the Oklahoma State Preservation Officer. There were no sites listed in the project area, but based on the topographic and hydrologic setting of the project, an archeological field inspection is considered necessary.

3.3.2 Socioeconomic Resources:

Okmulgee County encompasses 698 square miles of prairie, upland woodland, and bottomland forest in east central Oklahoma. The county is predominantly rural, and agriculture, particularly grazing, is the primary land use. In 1987, the county contained 1,009 farms averaging 248 acres in size. Roughly 62 percent of the farm operators in Okmulgee County reported that farming was their secondary occupation. The main cash crops, as determined by acres in production, were pecans, soybeans, and wheat. Prior to establishment of Deep Fork National Wildlife Refuge, most of the area was leased for private hunting and/or cattle grazing.

3.3.3 Public Use/Recreation:

Outdoor recreation is a significant aspect of the culture and tradition of the people in Eastern Oklahoma. A significant percentage of the local public around the refuge participate in outdoor activities such as hunting and fishing. The refuge also attracts a significant amount of non-consumptive users. Activities such as hiking, wildlife observation, and photography are gaining popularity. The refuge receives about 30,000 visitors annually. The breakdown of average annual refuge visits for each use is as follows; hunting (2750), fishing (800), wildlife observation (3,000), and wildlife photography (200).

4.0 ENVIRONMENTAL CONSEQUENCES:

This chapter analyzes and discusses the potential environmental effects or consequences that can reasonably be expected by the implementation of the alternatives described in Chapter 2.0 of this EA. An analysis of the effects of management actions has been conducted on the physical environment (air quality, water quality, and soils); biological environment (vegetation, wildlife, and threatened and endangered species); and socioeconomic environment (cultural resources, socioeconomic features including public use/recreation). The direct, indirect, and cumulative impacts of each alternative are considered. Direct effects are the impacts that would be caused by the alternative at the same time and place as the action. Indirect effects are impacts that occur later in time or distance from the triggering action. Cumulative effects are incremental impacts resulting from other past, present, and reasonably foreseeable future actions, including those taken by federal and non-federal agencies, as well as undertaken by private individuals. Cumulative impacts may result from singularly minor but collectively significant actions taking place over a period of time.

4.1 Physical Environment:

4.1.1 Impacts on Air Quality:

Alternative A--No Action Alternative:

No impacts to air quality are expected from continuation of current management.

Alternative B-- Proposed Action:

The proposed action may result in some short-term negative impacts at a local scale, as a result of the use of heavy equipment and large trucks to build and haul building materials. Temporary impacts to air quality from dust and emissions produced by heavy equipment would be minimal and would be undetectable after the project is implemented.

4.1.2 Impacts on Water Quality and Quantity:

Alternative A--No Action Alternative:

No impacts to water quality or quantity are expected from continuation of current management.

Alternative B - Proposed Action:

This alternative may result in some short-term negative impacts at a local scale, due to dirt work to be conducted. Impacts are expected to be minimal and best management practices (BMPs) would be implemented to minimize or prevent sedimentation issues related to construction projects. These impacts, in a worst case situation, would only last for the duration of the construction period.

4.1.3 Impacts on Soils:

Alternative A--No Action Alternative:

No impacts to soils are expected from continuation of current management.

Alternative B – Proposed Action:

This alternative would result in local adverse impacts due to soil disturbance up to 6 feet deep and covering of soils by buildings and parking facilities. Erosion rates in the immediate construction area are likely to increase slightly due to the removal of vegetation. Best management practices (BMPs) would be utilized by construction contractors to minimize any loss of soils due to erosion issues.

4.2 Biological Environment:

4.2.1 Impacts on Habitat:

Alternative A--No Action Alternative:

No impacts to habitat are expected from continuation of current management.

Alternative B – Proposed Action:

This alternative would have long-term and short-term impacts on approximately 10 acres of previously disturbed grassland/oak savannah habitat within Deep Fork NWR. Short-term impacts would occur during the construction phase of the project, and they include cutting and clearing of trees and other vegetation and disturbance of subsurface and soils.

All building activities would occur in upland locations on Deep Fork NWR.. This alternative would be implemented in a manner that minimizes negative impacts to habitat (e.g., positioning building so that the USFWS can conserve trees in the area, planting with native flora, etc.). Construction activities would occur for a minimal period of time. Short-term and long-term benefits are expected to far outweigh the loss of this small acreage of habitat.

4.2.2 Impacts on Wildlife:

Alternative A--No Action Alternative:

Under the No Action Alternative, the existing habitat conditions would be maintained. There would be no change in diversity or abundance of wildlife that use the area.

Alternative B – Proposed Action:

There would be some short-term adverse impacts on small mammals, birds, and other wildlife due to habitat loss and displacement during project implementation period; however, similar habitat is abundant

in the area and no loss of species diversity or abundance is likely. The possible short-term decline in wildlife numbers is not expected to be enough to affect the area's overall wildlife population.

4.2.3 Impacts on Threatened and Endangered Species and Special Status Species:

Alternative A--No Action Alternative:

Under the No Action Alternative, the existing habitat conditions would be maintained. There would be no impact to Threatened and Endangered Species.

Alternative B –Proposed Action:

Under Alternative B, the existing habitat conditions would be altered slightly, however impacts to the overall habitat availability are expected to be negligible. No federally listed species are known to occupy the proposed construction site. However, the occurrence of the American Burying Beetle in adjacent counties has been documented and the Service will conduct surveys prior to the construction of the administrative facility. A section 7 consultation under the ESA was completed and it was determined that the proposed action would have no effect on threatened and endangered species.

4.3 Human Environment:

4.3.1 Impacts on Cultural Resources:

Alternative A--No Action Alternative:

No impacts to cultural resources are expected from continuation of current management.

Alternative B – Proposed Action:

Activities undertaken under Alternative B are not expected to affect cultural resources. The project area has been surveyed by the State Historic Preservation Office and no cultural or archeological artifacts or sites were located.

4.3.2 Impacts on Socioeconomics:

Alternative A--No Action Alternative:

The economic and social condition of the area would remain the same. The refuge would continue to be one of the area's main attractions. The presence and operation of the refuge provides economic benefits to the surrounding communities within a 30 mile radius in several ways. The refuge attracts visitors and by attracting visitors to the area, the refuge generates revenue for the local economy. Much of the refuge's annual budget is recycled into local businesses through refuge staff, purchases of equipment and supplies, as well as contracts for local labor to accomplish refuge projects. The refuge provides full-time employment for 6 to 7 individuals that live in nearby communities.

Alternative B – Proposed Action:

Overall, the economic and social condition of the area would remain relatively the same; however there would be short-term positive benefits to the local economy during the construction phase of the project, since incidental parts and other materials would be purchased locally by contractors. Also, local labor may be utilized for portions of construction activities. Additionally, a new administrative office facility with a visitor contact area would benefit the local area by increasing visitor use of Okmulgee Oklahoma area. Local restaurants and other vendors would likely experience increases in business due to the diversion of visitors off of the Interstate-40 travel corridor.

4.3.3 Public Use/Recreation:

Alternative A--No Action Alternative:

No impacts to public use/recreation are expected from continuation of current management.

Alternative B – Proposed Action:

The proposed action would result in increased public use/recreation opportunities at the site of the proposed administrative office facility. There would be increased opportunities for birding, photography, public outreach/environmental education, and wildlife observation. There would be no increased hunting or fishing opportunities associated with this Alternative. The presence of dedicated environmental education facilities combined with outreach component would likely have a great increase in creating the opportunity to provide environmental education to the surrounding counties for schools, master naturalist programs, scouting programs, and various other organizational programs. The overall impacts to public perception should greatly increase.

4.4 Assessment of Cumulative Impacts:

A cumulative impact is defined as an impact on the environment that results from the incremental impact of the proposed action when added to other past, present, and reasonably foreseeable future action regardless of what agency (federal or nonfederal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7).

Cumulative impacts are the overall, net effects on a resource that arise from multiple actions. Impacts can “accumulate” spatially, when different actions affect different areas of the same resource. They can also accumulate over the course of time, from actions in the past, the present, and the future. Occasionally, different actions counterbalance one another, partially canceling out each other’s effects on a resource. But more typically, multiple effects add up, with each additional action contributing an incremental impact on the resource.

The planned location lies alongside South 250 Road, which is a cleared and paved travel corridor. Clearing of trees and other vegetation has occurred along this corridor, and USFWS clearing of the site to construct office and visitor center facilities may have cumulative effects within a very small area. However, cumulative impacts from clearing this small acreage are not expected to cause long-term adverse effects on the local environment. Additionally, the USFWS expects an increase in visitation with the construction of this administrative office facility and interpretive area, especially with its given proximity to Interstate-40 and Highway 75. Thus, there may be the need for additional road maintenance by Okmulgee County to upkeep portions of Lavender and South 250 roads. The preservation of the forested area surrounding the proposed project will have long-term benefits to the wildlife populations in the future.

Beyond increases in traffic to the local area, the refuge is not aware of any past, present or future planned actions that would result in a significant cumulative impact. The adverse direct and indirect effects of the proposed action on air, water, soil, habitat, and wildlife are expected to be minor and short-term. The benefits to long-term ecosystem health provided by the Refuge will far outweigh any of the short-term adverse impacts discussed in this document. Environmental education is vital to understanding the National Wildlife Refuge Systems and our Nation’s wildlife heritage. Outdoor experiences play a crucial role in helping shape positive lifelong attitudes toward wildlife and nature.

4.5 Environmental Justice:

None of the alternatives described in this EA will disproportionately place any adverse environmental, economic, social, or health impacts on minority and low income populations. Implementation of the proposed action is anticipated to be positive for the environment over the long-term and people in the surrounding communities.

4.6 Indian Trust Assets:

A private Native American cemetery is located nearby, but is not within the project site area, and will not be impacted by either alternative described in the EA.

4.7 Irreversible and Irretrievable Commitment of Resources:

None of the alternatives would result in a large commitment of nonrenewable resources over the long term, as the new facility is to be constructed as at least a Gold Level Leadership in Energy and Environmental Design (LEED) building. LEED is an internationally recognized green building certification system, providing third-party verification that a building or community was designed and built using strategies aimed at improving performance across all the metrics that matter most: energy savings, water efficiency, CO₂ emissions reduction, improved indoor environmental quality, and stewardship of resources and sensitivity to their impacts.

Project implementation would require the irretrievable commitment of fossil fuels (diesel and gasoline), oils, and lubricants used by heavy equipment and vehicles for a short period of time (i.e., less than 12 months). The Proposed Action will result in unavoidable harm or harassment to some wildlife, however this harassment will be short in duration and will be avoided when possible. The Service would implement best management practices to minimize potential impacts.

4.8 Table 1 - Summary of Environmental Effects by Alternative:

<u>Environmental Resource</u>	<u>Alternative A:</u> No Action Alternative	<u>Alternative B:</u>	<u>Alternative C:</u> Proposed Action Alternative
Impacts to Air Quality	No effect	Slightly direct negative (short-term)	Slightly direct negative (short-term)
Impacts to Water Quality and Quantity	No effect	Slightly direct negative (short-term)	Slightly direct negative (short-term)
Impacts to Soils	No effect	Slightly direct and indirect negative effect (short-term and long-term)	Slightly direct and indirect negative effect (short-term and long-term)
Impacts on Habitat	No effect	Short-term direct slight negative effect; long-term indirect slight negative effect (habitat degradation-tree clearing)	Short-term direct slight negative effect; long-term indirect slight negative effect (habitat degradation-tree clearing)

Impacts of Wildlife	No effect	Short-term direct slight negative effect (disturbance); long-term direct/indirect slight negative effect (small acreage of habitat lost)	Short-term direct slight negative effect (disturbance); long-term direct/indirect slight negative effect (small acreage of habitat lost)
Impacts on Threatened and Endangered Species	No effect	No effect expected	No effect expected
Impacts on Cultural Resources	No effect	No effect expected	No effect expected
Impacts on Socioeconomic Resources	No effect	Short-term and long-term direct/indirect positive effect	Short-term and long-term direct/indirect positive effect
Impacts on Public Use and Recreation	No effect	Positive direct/indirect effect	Positive direct/indirect effect

5.0 CONSULTATION, COORDINATION AND DOCUMENT PREPARATION

Document prepared by Deep Fork National Wildlife Refuge Staff , respectively; U.S. Fish and Wildlife Service, Okmulgee, Oklahoma.

5.1 Agencies and individuals consulted in the preparation of this document include:

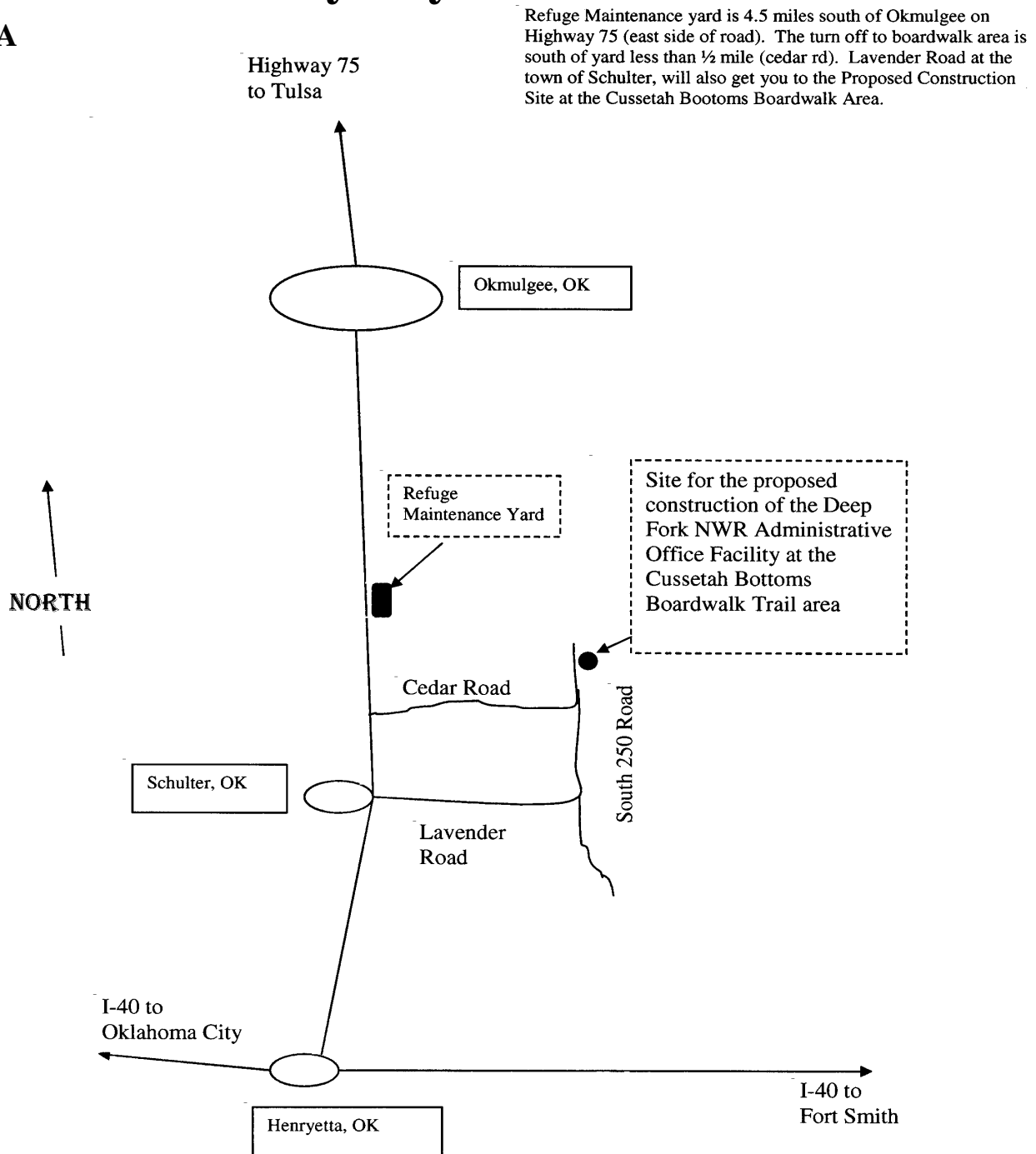
Dr. Robert Brooks Oklahoma Archeological Survey
Dr. Bob Blackburn, Oklahoma Historical Society
Jim Neal, Office of Migratory Birds
Jeff Johns, Region 2 Engineering Office
Darrin Unruh, Deep Fork National Wildlife Refuge
Timmy Ray Walker, Deep Fork National Wildlife Refuge
Lori Jones, Deep Fork National Wildlife Refuge
Carol Torrez, Region 2 NEPA Coordinator for Refuges

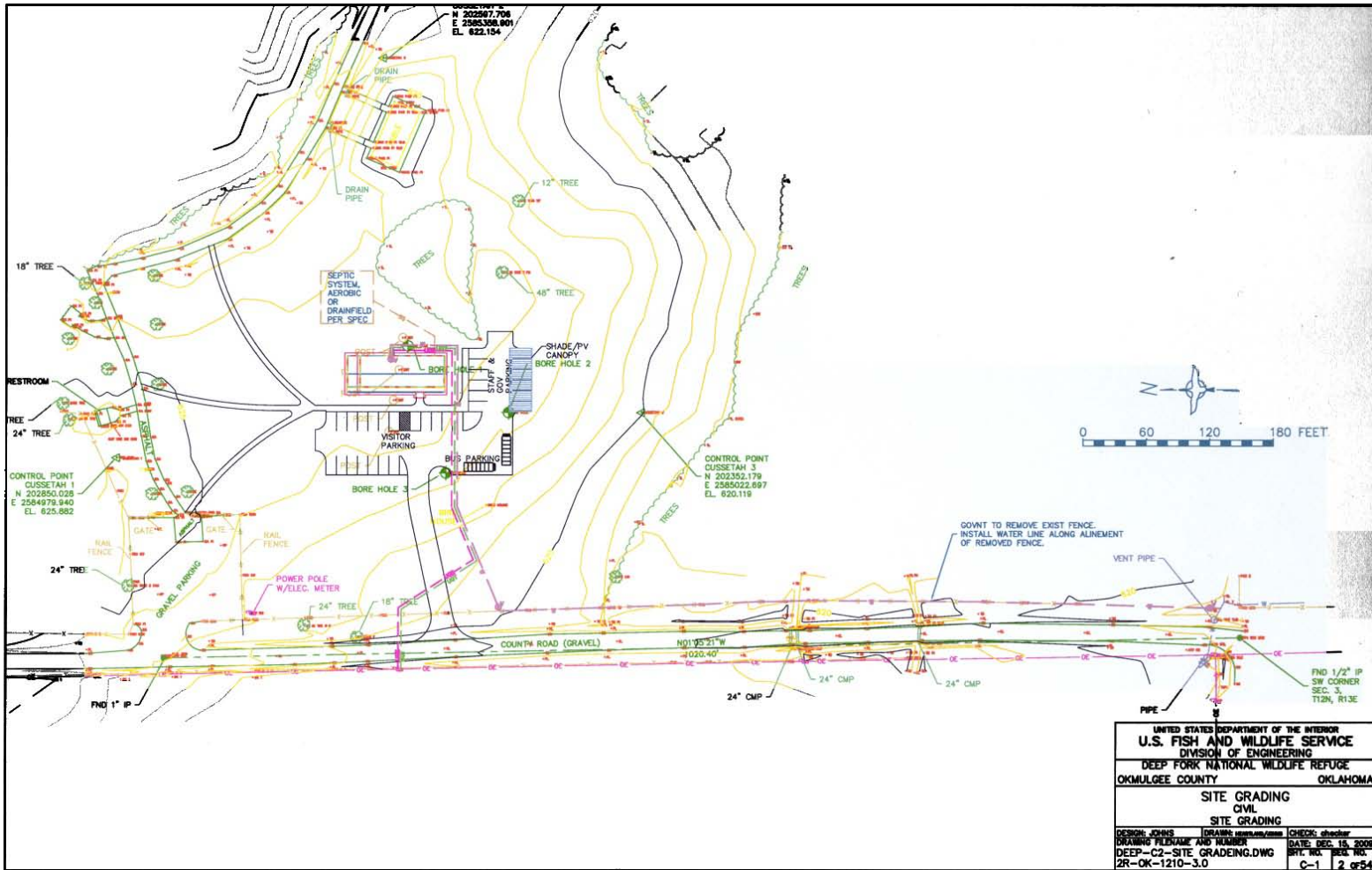
5.2 References:

Gehrt, S. D. 2003. Raccoon *in* Feldhammer, G. A., B. C. Thompson and J. A. Chapman, eds. Wild Mammals of North America, Biology, Management, and Conservation, 2nd ed. The John Hopkins University Press.
U. S. Fish and Wildlife Service. 2004. A Blueprint for the Future of Migratory Birds, Migratory Bird Program Strategic Plan 2004-2014, Appendix 4.

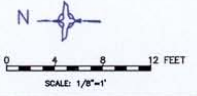
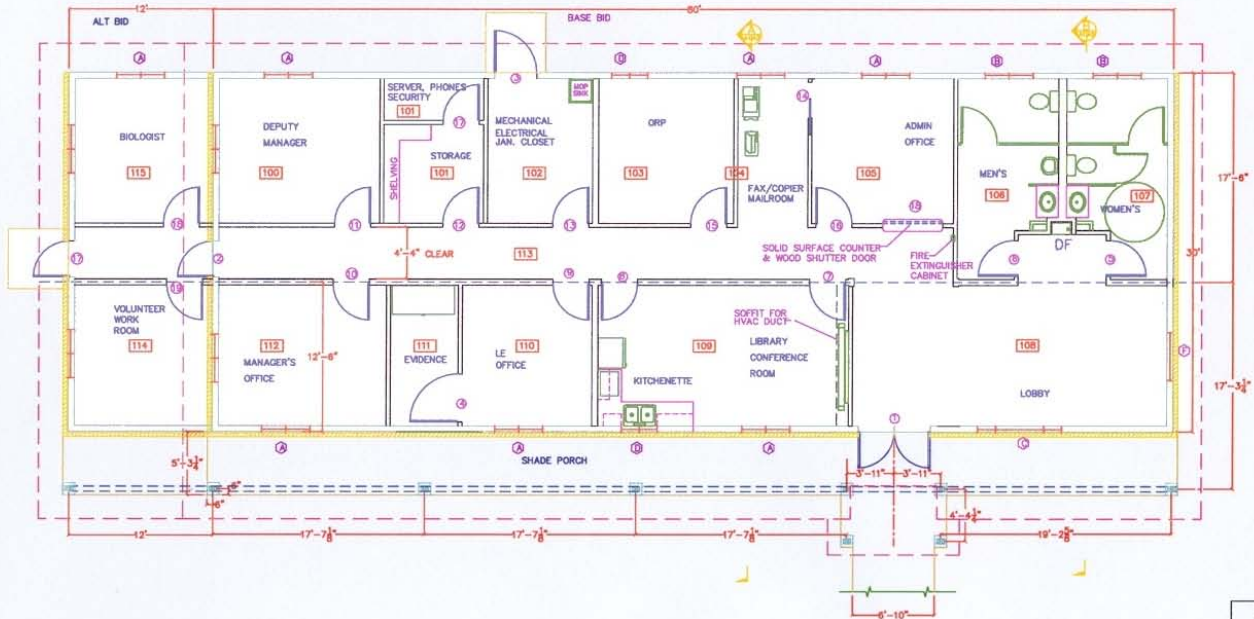
APPENDIX A- Location Map and Detailed Plans of Deep Fork National Wildlife Refuge's Proposed Administrative Office Facility Layout and Site Plan:

Appendix A





- NOTES:
 1. CENTER WINDOWS IN ROOMS UNLESS OTHERWISE NOTED.
 2. SEE STRUCTURAL & ARCHITECTURAL DETAILS FOR WALL DETAILS.
 A. INTERIOR, NON-LOAD BEARING WALL - 2X4@16"OC, SOUND INSULATED, 1" TYPE X GYP BD BOTH SIDES.
 B. INTERIOR, LOAD BEARING WALL, 2X8@12"OC, SOUND INSULATED, 1" TYPE X GYP BD BOTH SIDES.
 C. EXTERIOR WALLS, 2X8@16"OC, THERMAL INSULATION R19.
 3. INSTALL TERMITE SHIELD ALL EXTERIOR WALLS.
 4. ALL GYPSBOARD CORNERS SHALL BE ROUNDED.



UNITED STATES DEPARTMENT OF THE INTERIOR		
U.S. FISH AND WILDLIFE SERVICE		
DIVISION OF ENGINEERING		
DEEP FORK NATIONAL WILDLIFE REFUGE		
OKMULGEE COUNTY, OKLAHOMA		
HEADQUARTERS BLDG.		
ARCHITECTURAL FLOOR PLAN		
DESIGN: designer	DRAWN: drafter	CHECK: checker
DRAWING FILENAME AND NUMBER	DATE: 11/9/21	SHT. NO. 003 OF 003
DEEP-A1-FLOOR		
2R-OK-1210-3.0	A1	2.3 of 2